

*AZYGOCYPRIDINA LOWRYI*, A NEW SPECIES OF  
MYODOCOPID OSTRACODE FROM BATHYAL  
DEPTHS IN THE TASMAN SEA OFF  
NEW SOUTH WALES, AUSTRALIA

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*Abstract.* — *Azygocypridina lowryi*, a new species of myodocopid Ostracoda in the Cypridinidae, from the Tasman Sea, off N.S.W., Australia, at depths of 139–365.8 m is described and illustrated. The species differs from previously described species in having many more comb teeth on the 7th limb.

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McKenzie (1968) referred a female collected at a depth of 180 m in the Tasman Sea off Australia (34°03'S, 151°31'E) to *Azygocypridina* sp. Additional specimens from the same general area provided me the opportunity to study the species, and to conclude that it is new, as previously surmised by McKenzie. The following description and illustrations are intended to supplement those of the female described by McKenzie.

Most specimens have been returned to the Australian Museum, Sydney, N.S.W.; those assigned USNM numbers have been retained at the U.S. National Museum of Natural History.

*Azygocypridina lowryi*, new species

Figs. 1, 2

*Azygocypridina* sp. McKenzie, 1968:389–395, pls. 1–3. — Kornicker, 1970:10; 1975:206. — Athersuch, 1980:140, 141. — Hiruta, 1981:56.

*Etymology.* — The species is named for Dr. J. K. Lowry.

*Material.* — 1 paratype, register number P. 21032, collected by N.S.W. State Fisheries, N.E. of Wollongong, N.S.W., 34°16–22'S, 151°26–23'E, 365.8 m, 1975, sta K75-05-01, R.V. *Kapala*; 4 paratypes, register number P. 25021, collected by J. K. Lowry, W. F. Pender, F. W. E. Rowe, east of Double Island, Point, Queensland, 25°58.8'S, 153°51'E, dredged, 210–219 m, H.M.A.S. *Kimbla*, sta Q16, 10 Nov 1976; adult female holotype and 1 juvenile paratype, register number P. 25023, off Sydney, N.S.W., 200 m, 33°52.3'S, 151°40'E, BMR sta 1651, M.V. *San Pedro Strait*, 12 Mar 1972; 1 paratype, register number P. 25022, collected by P. Colman, 9 miles offshore, off Moreton Bay, Queensland, Tasman Sea, 139.0–146.3 m, large beam trawl, bottom of dead coral and shells, H.M.A.S. *Kimbla*, 15 Dec 1969; 6 paratypes, register number 25057, collected by J. K. Lowry, W. F. Ponder, F. W. E. Rowe, off south end of Fraser Island, Queensland, 25°57'08"S, 153°51'03"E, large dredge, 201 m, bottom of sand, brachiopods (extremely abundant), shells, bryozoans, H.M.A.S. *Kimbla*, 10 Nov 1977; 5 paratypes, USNM 193156a–c, dredge sta 43, 29.82 km east of South Head, Little Bay, Sydney, N.S.W., 33°54'48"S, 151°34'30"E, 192–303 m, 9 Aug 1973.

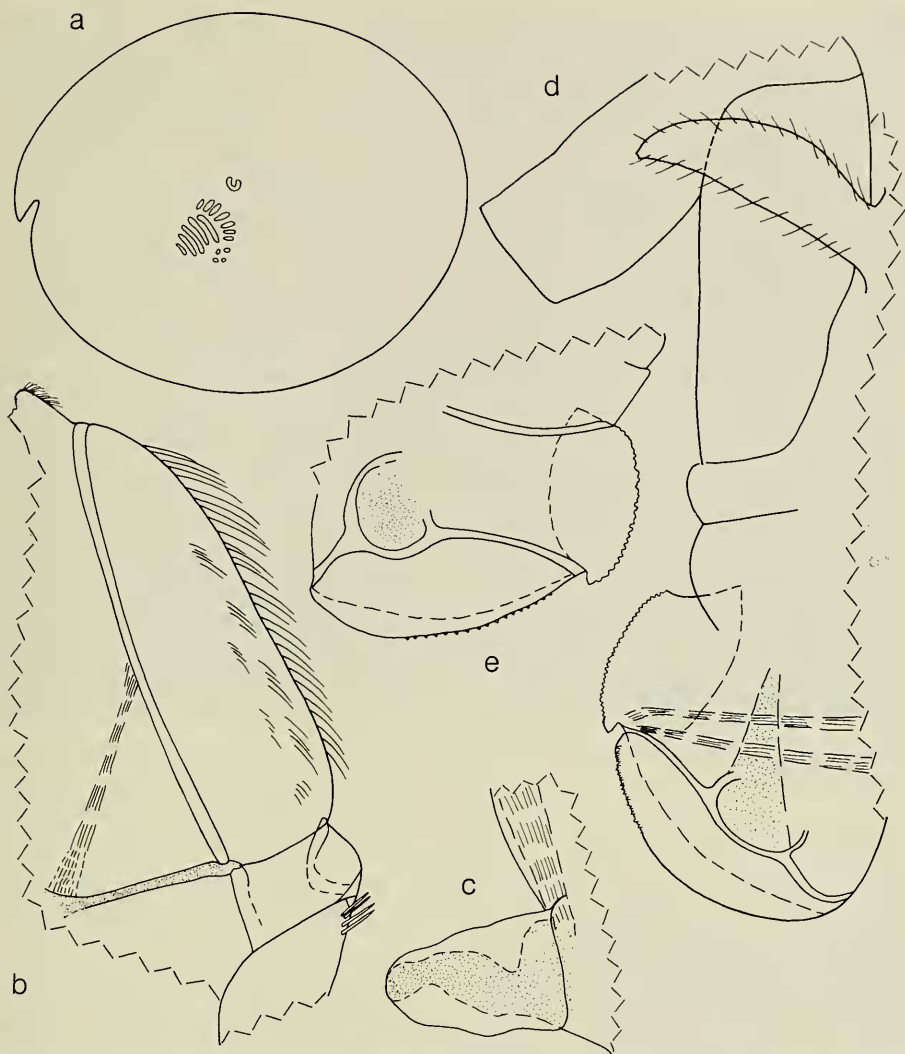


Fig. 1. *Azygocypridina lowryi*, adult female, holotype: a, Lateral view of complete specimen showing position of adductor muscle attachments, carapace length 11 mm; b, Posterior of body showing part of caudal furca (4 posterior claws shown), hirsute posterior margin, small hirsute dorsal process, Y-sclerite (stippled), girdle, and muscle attached to anterior end of Y-sclerite; c, Bellonci organ and muscle generally connected to medial eye of cypridinids; d, Anterior of body from left showing joints 1 and 2 of left 1st antenna (bristles of 2nd joint not shown), left lateral eye, and upper lip; e, Upper lip viewed from right side.

*Distribution.* — The species has been collected at depths of 139–365.8 m in the Tasman Sea off N.S.W. and Queensland, Australia.

*Description of female.* — Carapace oval in lateral view (Fig. 1a).

*Size:* Holotype, length, 11 mm, height 9 mm; 2 specimens (USNM 193156a), length 11 mm, height 8.5 mm, length 11 mm, height 9 mm.

*First antenna:* 1st joint bare. 2nd joint with 22 dorsal bristles, 6 ventral bristles, and 1 lateral bristle; distal medial surface with minute spines forming short rows.

3rd joint with 11 dorsal and 6 ventral bristles. 4th joint with 5 distal dorsal bristles and 5 distal ventral bristles. Sensory bristle of 5th joint about same length as combined lengths of joints 3 to 8, with abundant long sensory bristles along proximal half, and short filaments along distal half. Medial bristle of 6th joint bare, about half length of sensory bristle of 5th joint. 7th joint: a-bristle slightly shorter than bristle of 6th joint, bare, tapering to point, appearing more heavily sclerotized than other bristles of limb; b-bristle slightly longer than twice length of a-bristle, with about 25 short marginal filaments; c-bristle about 3-times length of sensory bristle of 5th joint, with numerous short filaments along length. 8th joint: d- and e-bristles bare with blunt tips, slightly shorter than b-bristle; f- and g-bristles longer than c-bristle, with short filaments along length.

Second antenna: Protopodite with distal, medial, bare bristle. Endopodite 3-jointed; 1st joint with 4 proximal and 3 distal bristles; 2nd joint with 1 distal bristle; 3rd joint with 2 terminal bristles (1 long, about same length as combined lengths of joints 1-3, and 1 short, about equal in length to width of 3rd joint near proximal end). Exopodite: bristle of 2nd joint reaching just past 9th joint, with natatory hairs; joints 2-8 with basal spines increasing in length distally (spine of 8th joint about twice length of 9th joint); 9th joint with 2 minute lateral spines and 7 bristles (6 long, 1 short), all with natatory hairs; distal margins of joints 2-8 with minute spines forming rows.

Mandible: Coxale endite stout, spinous, and with bifurcate tip. Basale: proximal ventral corner area with 2 short, stout, pectinate bristles and 11 narrow bristles (some on ventral margin); distal ventral margin with long, stout, spinous bristle; dorsal margin distal to middle with 9 spinous bristles forming row extending onto medial surface and 2 long, stout, spinous, terminal bristles. Exopodite extending past distal edge of 1st endopodial joint, with 2 distal, spinous, ventral bristles (distal of these about  $\frac{3}{4}$  length of other). Endopodite: ventral margin of 1st joint with 8 bristles (4 of these lateral to others, and much longer); 2nd joint with numerous dorsal bristles and 10 distal ventral bristles; 3rd joint with short dorsal claw, 2 long terminal claws, and 4 bristles.

Maxilla: Endite I with 18 spinous and pectinate terminal bristles (4 of these medial and small); endite II with medial spines and about 10 spinous terminal bristles; endite III with about 10 spinous terminal bristles and about 6 proximal lateral bristles in vicinity of exopodite. Basale with 1 short medial bristle near exopodite, 1 stout, hirsute dorsal bristle, and 5 slender bristles at distal anterior corner. Endopodite: 1st joint with 10 alpha-bristles and 5 beta-bristles (all except smallest of beta-bristles with stout marginal spines); end joint with 7 slender, bare a-bristles, 4 b-bristles, 5 c-bristles, and 4 d-bristles; inner 3 b-bristles and inner 3 d-bristles unringed, claw-like; all b-, c-, and d-bristles with stout marginal spines. Exopodite stout, hirsute, with 3 bristles (1 subterminal, 2 terminal).

Fifth limb: Endites 1-3 with numerous spinous bristles. Exopodite: main tooth of 1st joint with proximal spinous bristle followed by pointed peg and 6 pectinate teeth; anterior side of 1st joint with 6 spinous bristles forming row near outer edge and stout hirsute bristle near d-bristle of 2nd joint; 3 small bristles proximal to the stout hirsute bristle; 2nd joint with 6 a-bristles (all except proximal bristle pectinate), 7 b-bristles, and 1 c-, and 1 d-bristle; inner lobe of 3rd joint with 7 bristles (bare or with few spines), outer lobe of 3rd joint hirsute, with 2 spinous



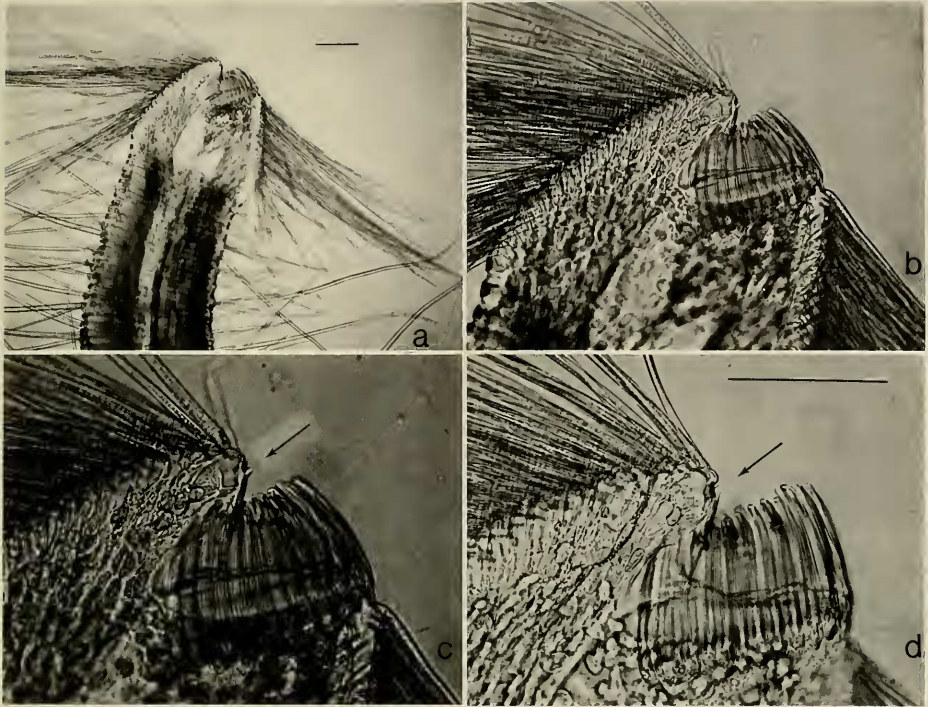


Fig. 2. *Azygocypridina lowryi*, adult female, holotype: a, Distal part of 7th limb; b, detail of tip of limb shown in a; c, Detail from b; d, Tip of opposite 7th limb. Length of scale bar 100  $\mu\text{m}$ ; arrows indicate tooth. Photographs taken by Dr. Robert P. Higgins.

terminal bristles; 4th joint with 10 bristles; 5th joint with proximal and distal lobes (proximal lobe with 7 bristles, distal lobe hirsute, with 12 bristles).

Sixth limb: Posterior edge of stem hirsute; 6 bristles in place of epipodial appendage. Endite I narrow, with 4 short, unringed, medial bristles with spine at tip, and 3 longer, spinous, ringed terminal bristles; endite II twice breadth of endite I, with 5 short, unringed, medial bristles with spine at tip, and 11 spinous ringed, terminal bristles; endite III about same width and length as endite II, with 2 ringed, medial bristles near ventral edge and about 20 spinous ringed, terminal bristles; endite IV slightly longer than endite III, with 6 slender, ringed, medial bristles near ventral edge and about 26 spinous, ringed, terminal bristles. End joint divided into broad anterior lobe and small posterior lobe; anterior lobe with over 100 ringed bristles (shorter bristles generally with only short marginal spines; longer bristles with rings of long spines proximally and short spines distally); posterior lobe with 9 ringed bristles along edge (proximal  $\frac{3}{4}$  of bristles hirsute, distal  $\frac{1}{4}$  with short marginal spines); lateral and medial surfaces of both lobes of end joint hirsute.

Seventh limb (Fig. 2): Limb with total of about 339 bristles: approximately 120 bristles in terminal segment (50 on comb side, 70 on jaw side), and 219 proximal bristles (102 on comb side, 117 on jaw side); bristles vary in diameter and length; small bristles with 2–4 bells; long, stout bristles with up to 13 bells; part of bristle

proximal to bells with marginal spines. Terminal comb with 28 teeth with rounded tips and marginal spines; jaw opposite comb with minute terminal tooth close to base of bristle.

Furca (Fig. 1b): Claw 1 of right lamella anterior to claw 1 of left lamella; claw 1 shorter than claw 2. Right lamella of holotype with 25 claws, left with 27; starting with claw 2, claws arranged in 5 or 6 groups with claws decreasing in length and diameter in each group.

	I	II	III	IV	V	VI
Left lamella	4	2	2	3	2	13
Right lamella	3	4	3	2	12	—

Bellonci organ (Fig. 1c): Short, tapering to rounded tip.

Lateral eye (Fig. 1d): Each eye elongate, flap-like with marginal hairs and without ommatidia.

Upper lip (Fig. 1d, e): Anterior part with numerous minute glandular openings; ventral part consisting of 2 lobes bearing slender spines along anteroventral surface, minute spines forming clusters along lateral surfaces, and long hairs on posterior and posteroventral surfaces; lateral surface proximal to ventral margins of lobes with sclerotized frame near middle having incomplete ring; surface within incomplete ring with numerous minute glandular openings.

Posterior of body (Fig. 1b): Posterior surface proximal to furca hirsute. Posterior of body dorsal to end of sclerotized girdle with small hirsute process. Y-Sclerite broadening at anterior end but without ventral branch.

Eggs: USNM 193156a with well developed eggs, length 1.47 mm, height 1.00 mm.

*Description of adult male.*—Carapace similar in shape to that of adult female.

Size: USNM 193156b, length 10.5 mm, height 8.5 mm.

First antenna: 1st joint bare. 2nd joint with 17–21 dorsal bristles, 3 ventral bristles, and 1 lateral bristle. 3rd joint with 10–13 dorsal bristles, and 4 ventral bristles near middle. 4th joint with 4 distal, dorsal bristles and 5 distal, ventral bristles. Sensory bristle of 5th joint similar to that of female. Medial bristle of 6th joint bare. Bristles of 7th and 8th joints broken on specimen examined; bristles similar to those of female except for b- and c-bristles bearing filaments with spoon-like tips.

Second antenna: Protopodite with distal, medial, bare bristle. Endopodite 3-jointed: 1st joint with 4 proximal and 3 or 4 distal bristles; 2nd joint broad, slightly longer than 1st joint, with about 14 marginal bristles; 3rd joint narrow, curved, reflexed on 2nd joint, with 1 long proximal bristle and 2 minute subterminal bristles. Exopodite similar to that of female.

Seventh limb: Marginal bristles abundant but not counted. Terminal comb with about 20 teeth with rounded tips and marginal spines; jaw opposite comb with minute terminal tooth similar to that of female.

Lateral eye: Similar to that of female.

Remaining appendages: Not examined.

*Description of instar III female* (P. 25023).—Carapace oval in lateral view.

Size: Length 5 mm, height 4.2 mm.

First antenna: 1st joint bare. 2nd joint with 8 dorsal bristles, 2 ventral bristles,

and no or 1 lateral bristle. 3rd joint with 2 dorsal and 2 ventral bristles on left limb and no bristles on right limb. 4th joint with 2 distal dorsal bristles and 2 distal ventral bristles on left limb and 2 dorsal bristles on right limb. Sensory bristle of 5th joint similar to that of adult. 6th joint with bare medial bristle. Bristles of 7th and 8th joints not studied in detail but, in general, similar type to those of adult female.

Second antenna: Protopodite similar to that of adult female. Endopodite similar to that of adult female, but with 2 bristles on 1st joint, 1 bristle on 2nd joint, and 1 long terminal bristle on 3rd joint. Exopodite similar to that of adult female but with only 4 bristles on 9th joint.

Mandible, maxilla, 5th limb: Not studied in detail but similar type to that of adult.

Sixth limb: Similar in type to that of adult, with numerous bristles.

Seventh limb: Elongate without bristles.

Furca: Claw 1 of right lamella anterior to claw 1 of left lamella; claw 1 shorter than claw 2; each lamella with 15 claws; starting with claw 2, claws arranged in 4 groups with claws decreasing in length and diameter in each group.

	I	II	III	IV
Left lamella	2	2	2	8
Right lamella	2	2	2	8

Lateral eye: Same shape as that of adult but with sparse hairs.

Posterior of body: Similar to that of adult female in having small, hirsute, thumb-like, dorsal process.

*Remarks.*—The specimen described by McKenzie differs in shape and color from those on hand. The McKenzie female is elongate (height 67% of length) and was bright red when caught (McKenzie 1968, pl. 3: fig. 24, p. 394). The specimens studied herein are more oval (height 77–82% of length), and a photograph received from the Australian Museum of a specimen (register number 21023) suggests that they are orange. Possibly, the orange specimen was originally red, and had faded before being photographed. The difference in shape of the specimens may be the result of intraspecific variation. The 3rd instar conforms with other genera in the Cypridinidae in having a bare 7th limb and well developed 6th limb.

*Comparisons.*—No previously described species of *Azygocypridina* bears as many finger-like teeth (20 male, 28 female) on the tip of the 7th limb.

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